# DEPARTMENT OF DEFENSE APPROPRIATIONS FOR 1952

THURSDAY, JULY 5, 1951

UNITED STATES SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
*Washington, D. C.*

The subcommittee met at 10 a. m., pursuant to recess, in room 224, Senate Office Building, Hon. Joseph C. O'Mahoney (chairman of the subcommittee), presiding.

Present: Senators O'Mahoney, Ferguson, and Knowland.

## DEPARTMENT OF THE NAVY

### OFFICE OF THE COMPTROLLER

**STATEMENTS OF REAR ADM. EDWARD W. CLEXTON, UNITED STATES NAVY, ASSISTANT COMPTROLLER, DIRECTOR OF BUDGET AND REPORTS; CAPT. CHARLES ADAIR, UNITED STATES NAVY; ASSISTANT DIRECTOR OF BUDGET AND REPORTS; CAPT. ROBERT R. CRAIGHILL, UNITED STATES NAVY, CHIEF STAFF OFFICER, OFFICE OF BUDGET AND REPORTS; AND VICE ADM. A. G. NOBLE, UNITED STATES NAVY, CHIEF OF NAVAL MATERIAL**

#### GENERAL STATEMENT

Senator O'MAHONEY. The subcommittee will come to order, please.

We will begin the hearing this morning with a statement by Rear Adm. E. W. Clexton, of the Navy, the Assistant Comptroller, and Director of the Budget.

You may proceed, Admiral.

Admiral CLEXTON. Mr. Chairman, gentlemen, the Chief of Naval Operations has outlined for you a summary of the operating forces, including ships, aircraft, and military personnel strengths required to provide a minimum state of readiness of your Navy and Marine Corps for the fiscal year 1952 in the light of current world conditions. I shall summarize the budget estimates for support of these forces.

#### COMPARISON OF 1952 ESTIMATES WITH APPROPRIATIONS FOR 1950 AND 1951

Table A, which I would like to insert in the record at this point, is an analysis of total cash appropriations and new obligating authority for the fiscal year 1952 estimates with a comparison of appropriations and authorizations for fiscal years 1950 and 1951. The figures in table A are presented on the chart now before you.

(The table referred to is as follows):

TABLE A.—*Total cash appropriations and new obligating authority, fiscal years 1950, 1951, and 1952*

[In millions of dollars]

| | Appropriated, 1950 | Adjusted, 1951 | Estimate, 1952 |
|---|---|---|---|
| Total cash appropriation | 4,260 | 12,534 | 15,738 |
| Less: Cash for prior contract authority | 790 | 768 | 667 |
| Ships | 209 | 160 | 101 |
| Ordnance | 128 | 78 | 65 |
| Aircraft | 418 | 530 | 450 |
| Public works | 35 | | 51 |
| Cash for new programs | 3,470 | 11,766 | 15,071 |
| Add: New contract authority | 618 | 700 | |
| Ships | 99 | | |
| Ordnance | 32 | | |
| Aircraft | 452 | [1] 700 | |
| Public works | 35 | | |
| Total, new obligating authority | 4,088 | 12,466 | 15,071 |

[1] Includes $124,797,000 prior-year contract authority carried forward.

PRIOR YEAR APPROPRIATIONS AND AMOUNT REQUESTED FOR 1952

Admiral CLEXTON. The total cash appropriations or estimates include both cash for new programs and cash to liquidate old contract authorizations granted in prior years. For 1950 the total cash appropriated amounted to $4,260,000,000 including $279 million to liquidate prior-year contract authorizations. For 1951, the total cash appropriation amounts to $12,534,000,000. The total cash appropriation requested for 1952 amounts to $15,738,000,000, $15,071,00,000 for new programs and $667,000,000 for liquidation of prior contract authorizations—of which $166 million is for ship construction, $450 million for aircraft, and $51 million for public works.

NEW OBLIGATING AUTHORITY

New obligating authority for 1952, which is the financial measure of new programs to be undertaken, amounts to $15,071 million. This is an increase of $2,605 million over the 1951 authorization of $12,466 million. No new contract authority is requested for 1952. The increase for 1952 reflects the build-up of forces which began following the outbreak of the Korean War and the continued procurement of modern weapons to attain an improved position of war readiness. We now have an expanded force to feed, clothe, operate, and maintain.

BASIC PLANNING CRITERIA

Certain planning criteria were established in order to provide a common base for estimating, to which could be added requests for supplemental funds depending upon the military operations, pricing levels, and industrial output. First, due to the difficulty of accurately predicting usage and combat attrition of aircraft, ships, tanks, ammunition, and other equipments used by military forces, and pipe-

lines involved, consumption rates and price levels were established for budget-estimating purposes only. While such assumptions are appropriate and necessary for budget estimating, modification of our estimates can be expected later in the year, dependent upon the extent and tempo of combat operations during the fiscal year 1952. We are particularly concerned with such items as ammunition, pay, and subsistence of a greater personnel strength for the Navy and Marine Corps required under combat conditions, and greater requirements of fuel, gasoline, and transportation to support the operation of ships and aircraft in actual combat and under accelerated training prior to combat. With the funds requested in our Navy budget, there will be no cut-back in any of our military operations within the next several months. When combat requirements are known, we will come before you with estimates to match our needs.

Second, that funding for procurement of equipment and material would be phased to correspond with the estimated ability of industry to deliver end items during the next 12 to 18 months. A judicious procurement policy will be followed to maintain balanced war readiness.

Third, that the Navy portion of the public-works program has now been formulated and will be submitted and justified separately at a later date, and is not included in this presentation.

## ESTIMATES BY APPROPRIATIONS FOR FISCAL YEAR 1952

I should like to insert in the record at this time table B which is a summary of Navy appropriation requests for fiscal year 1952 compared with fiscal year 1950 and fiscal year 1951.

(The table referred to is as follows:)

TABLE B.—*New obligational authority, by appropriation title, fiscal years 1950, 1951, and 1952*

[In thousands of dollars]

| Item | Fiscal year 1950 | Fiscal year 1951 | Fiscal year 1952 |
|---|---|---|---|
| Military personnel, Navy | 1,231,309 | 1,824,886 | 2,463,365 |
| Military personnel, Naval Reserve | 63,849 | 57,137 | 62,718 |
| Military personnel, officer candidates | 15,173 | 19,073 | 19,807 |
| Naval personnel, general expenses | 61,425 | 122,785 | 97,970 |
| Military personnel, Marine Corps | 217,253 | 476,158 | 565,459 |
| Military personnel, Marine Corps Reserve | 11,550 | 7,439 | 15,145 |
| Marine Corps troops and facilities | 95,488 | 612,370 | 1,052,970 |
| Aircraft and facilities, Navy | 523,384 | 932,388 | 925,393 |
| Construction of aircraft and related procurement, Navy | 581,163 | 3,050,922 | 3,572,476 |
| Ships and facilities, Navy | 407,362 | 1,565,402 | 1,605,424 |
| Construction of ships, Navy | 109,117 | 670,800 | 21,392 |
| Shipbuilding and conversion, Navy | | | 1,343,297 |
| Ordnance and facilities, Navy | 192,696 | 1,462,412 | 1,347,668 |
| Ordnance for new construction, Navy | 41,503 | 75,800 | 0 |
| Ordnance for shipbuilding and conversion, Navy | | | 431,390 |
| Medical care, Navy | 39,754 | 128,818 | 136,545 |
| Civil engineering, Navy | 54,862 | 176,346 | 203,488 |
| Public works, Navy | 64,990 | 470,159 | 0 |
| Research, Navy | 44,946 | 80,395 | 69,698 |
| Service-wide supply and finance, Navy | 245,391 | 423,309 | 497,602 |
| Service-wide operations, Navy | 72,932 | 150,120 | 152,729 |
| Island governments, Navy | 1,300 | 2,125 | 0 |
| Operation and conservation naval petroleum reserves | 9,500 | 4,000 | 11,908 |
| Naval petroleum reserve No. 4, Alaska | 3,000 | 11,000 | 0 |
| Navy stock fund | 0 | 143,000 | 475,000 |
| Total, new obligating authority | 4,087,947 | 12,466,844 | 15,071,444 |

DETAIL JUSTIFICATIONS

Admiral CLEXTON. They are the exact appropriation amounts which the bureau chiefs will justify separately as they come up.

The Navy's request for appropriations will be presented in detail by the chiefs of the various bureaus and offices. Justifications are designed to indicate clearly costs of Navy programs, such as operation of ships, aircraft, and the required shore support.

The Navy has so placed its available funds into appropriations to insure a well-balanced, modern fighting force of ships, aircraft squadrons, and Marine Corps troops. We are organized afloat and ashore in a logical, straightforward command relationship which, when backed up by the appropriations requested for 1952, should assure our ability to carry out the assigned missions. The 1952 appropriations are required in order to continue or complete the naval programs initiated with 1951 funds. The world situation has not appreciably changed and the urgency for naval preparedness has not lessened. We believe the American public wants a naval fighting force immediately available to fight whenever required in any part of the world with a minimum of red tape or command problems. We have tried to give the public this naval insurance at a low cost commensurate with the risks involved.

SUMMARY

To summarize, the Navy has in the 1952 estimates:

1. Funds to pay the military personnel of the Navy and the Marine Corps at the approved strengths and to operate its ships, aircraft squadrons, and Marine Corps troops in accordance with the military plans.

2. Funds for the maintenance, repair, rehabilitation, and operation of a minimum of shore stations to support the forces in being. A shortage of maintenance funds in 1949, and especially 1950, has proved costly as the rehabilitation costs have been many times that required for normal maintenance.

3. Funds for the modernization of our ships, aircraft squadrons, and Marine Corps to insure that our forces which will be committed to combat immediately are well armed and ready.

4. Funds for the modernization of a portion of our Navy and Marine Corps Organized Reserves who have early combat assignments.

5. Funds for a well-coordinated research and development program which should keep us abreast of our enemies in the design of weapons, be they ships, aircraft, mines, missiles, antisubmarine devices, or guns.

6. Funds to tool our production lines in industry and Navy industrial facilities and to buy a minimum of completed items, resulting in preparedness at a minimum cost.

7. Funds to administer our fighting programs in a straight-forward manner so as to get the most defense out of every dollar spent.

PROCUREMENT

Since the funds for procurement of major items in the Navy's 1952 budget comprise over half the total new program request, we believe it will be advantageous to the committee to examine our basic pro-

curement policy prior to the detailed presentations of the Bureau chiefs. Vice Admiral Noble, Chief of Naval Material, will follow immediately after me to outline the over-all Navy policy on procurement.

AVAILABILITY OF ADDITIONAL DATA

The task before you gentleman of reviewing the entire military estimates is a very arduous one, and is of utmost importance to the security of this Nation. I will be available during the entire hearings to give assistance to any extent you may require. Complete detailed justifications of each appropriation will be given by the Bureau chiefs appearing in the order outlined on the witness list.

Senator O'MAHONEY. Admiral, if you will look at your table B, which gives a very helpful and detailed schedule of the particular objects for which the money is requested, it shows a total of $15,071,445,000. That is almost $5 billion more than the entire expenditure of the Government for all purposes back in 1939 or 1940. I observe that for military personnel you have the second largest item, $2,463,000,000. The testimony of the Secretary and Admiral Sherman indicated that you are planning a Naval Establishment composed of about 860,000 military personnel, as I recall it, so it is understandable that the cost of maintaining the military personnel is high.

CIVILIAN PERSONNEL

Senator FERGUSON. Where is the civilian personnel in this list? Or does this cover just the military?

Admiral CLEXTON. The civilian personnel are included in each one of the appropriations where the civilian personnel are used to manufacture or overhaul material or to maintain the stations. Under "Ships and Facilities," you have the operation of ships, the overhaul, and under "Aircraft and Facilities," you will find the operation and overhaul of aircraft, the maintenance of the air stations.

Senator O'MAHONEY. You will recall, Senator Ferguson, at the opening of the hearings, I requested Secretary Lovett to have prepared a complete showing on the civilian personnel.

Senator FERGUSON. It was not set out specifically here.

Admiral CLEXTON. We do not budget for civilian personnel as an appropriation.

Senator FERGUSON. The ships and facilities include material as well as personnel?

Admiral CLEXTON. Yes sir.

Senator FERGUSON. Under "Military personnel, Navy," like in the Secretary's Office, is there any civilian personnel?

Admiral CLEXTON. Under the appropriation "Military personnel, Navy," there is nothing but the pay and allowances, transportation and subsistence of military personnel. There are no civilians in that appropriation at all.

Senator FERGUSON. The civilians that are in that Department, where are they listed?

Admiral CLEXTON. They would be under "Military personnel, general expenses." That is where the training establishment and the Department would be maintained by civilian personnel. So, as you

come to each appropriation, it would be appropriate at that time to have the civilian personnel requirements discussed with the bureau chief involved.

Senator O'MAHONEY. The largest item on table B is that for construction of aircraft and related procurement which is $3,572,000,000. Then there follow along various items, the ships and facilities, $1.6 billion. Precisely what is that?

Admiral CLEXTON. That is the appropriation which pays for the maintenance and operation of the 1,161 active ships of the Navy and other allied costs.

Senator O'MAHONEY. That is operation exclusive of the pay of the military personnel, of course.

Admiral CLEXTON. Yes, sir, no military pay.

There is no pay of military any place except in the activity, under "Military personnel, Navy, Naval Reserve and Candidates," and in the Marine Corps under "Military personnel, Marine Corps," and "Marine Corps Reserve."

MODERNIZATION PROGRAM OF NAVY

Senator O'MAHONEY. Then we have "Shipbuilding and conversion," $1,343,000,000. In your listing of the objectives of expenditure under paragraph 3, you speak of funds for the modernization of ships.

Under paragraph 4, you speak of funds for the modernization of a portion of our Navy and Marine Corps and Organized Reserves.

I wonder if you could give us an amplification of the program of modernization? We have, without question, the largest Navy in the world. Do we need the large sums which are listed here for modernization?

Admiral CLEXTON. I would like to cover that in the manner in which Admiral Sherman covered it when he was up here, and then allow you to get details on our "Construction of ships" program when the Chief of Naval Operations witnesses and the Chief of the Bureau of Ships come up for that particular appropriation. But I can, in general, cover what Admiral Sherman told you in that our shipbuilding program for fiscal year 1952 covers the construction of 113 ships, and the conversion of 198 ships.

Senator KNOWLAND. How many of those are the fleet-type submarines converted into snorkels?

Admiral CLEXTON. I believe there are 22 conversions of submarines in that program. That program has been going on continuously.

In the conversion part of our program, as testified by Admiral Sherman, we have to strengthen the flight decks and change the catapults and change the arresting gear of our carriers in order to take the new modern aircraft. That has been a continuing program, and we have in this fiscal year 1952 four conversions requested.

NECESSITY FOR NEW EQUIPMENT

Senator O'MAHONEY. The Navy put a large part of its vessels into "moth balls" after World War II; and, of course, you are taking many of them out now, according to previous testimony. The question is: To what extent are these outmoded and to what extent is it necessary

to expend money for modernization? And the corollary: What activity or construction on the part of any possible enemy or the Russians makes it necessary for us to obtain new equipment?

Admiral CLEXTON. The speed and weight of the new aircraft cause a considerable number——

Senator O'MAHONEY. I am not talking about the aircraft.

Admiral CLEXTON. I mean the actual speed and weight of our own aircraft and the possible enemy aircraft make essential a great portion of our shipbuilding-conversion program. For instance, you cannot operate the new aircraft we now have on the old carriers. The decks are not strong enough. The arresting gear will not arrest the planes, and the catapults will not catapult the new aircraft.

In the field of antiaircraft we have a large program of replacing the old 40-millimeter guns with new rapid-fire 3″/50. The old guns and their fire-control system will not follow the new aircraft. They could not hit them. The computing system will not keep up with the speed of the aircraft. So, you must replace the guns on the ships.

In regard to the antisubmarine developments, the fast-cruising snorkel submarine requires entirely different techniques to detect it and eliminate it. That requires changes in our destroyers, our destroyer escorts, and escort carriers. As testified to by Admiral Sherman, we have an entirely different problem in mine craft. You know in Korea we have already lost several minesweepers. We have a program in this budget to develop these new minesweepers.

Senator O'MAHONEY. What you are saying amounts in summary to this: That the technological improvement has been so great that vessels and equipment which at that time were the last word are now outmoded and have to be modernized to meet the new conditions, and all of that is very much more expensive than at any time before?

Admiral CLEXTON. That is correct. But you have preserved the initial investment in the ship. Our "moth balling" program has kept these ships in excellent condition.

Senator FERGUSON. What are some of the radical changes in ship equipment?

Admiral CLEXTON. The gun which I mentioned, the 3″/50 rapid-fire gun and its fire-control system, will now be effective against the aircraft which can come toward our ships; whereas the old 40-millimeter would not have enough range and the fire control would not have the computing ability to keep up with the speeds.

Senator FERGUSON. Have you a plan that you are going to be able to manufacture enough of these new weapons to equip all these ships and spend all this money?

Admiral CLEXTON. Yes, sir. There is a program set out by the Chief of Naval Operations which dovetails this entire program into the fleet. We are taking the ships of the present fleet while they are in their overhaul period and installing these improvements at that time.

### QUESTION OF ADEQUACY OF MACHINE-TOOL INDUSTRY

Senator FERGUSON. I face this situation daily in our Michigan area, and I had in mind there are not enough machine tools to make these new weapons. The machine-tool industry is 27 months behind in orders.

Are you familiar with that and will that interfere in any way with the manufacturing of these products?

Admiral CLEXTON. I would like to have Admiral Noble, who is our Chief of Naval Material, answer. That is under his cognizance.

Admiral NOBLE. Replying directly to your statement, there is not adequate machine-tool capacity in Michigan——

Senator O'MAHONEY. The Senator did not confine it to Michigan.

Senator FERGUSON. I find that it exists there.

Admiral NOBLE. I would like to take exception to that understanding, because I do not believe it is entirely correct. There are machine tools available for production. We have not had the contracts or the money for the contracts to get under production. I do believe there are machine tools which are capable of doing the necessary armament production.

Senator FERGUSON. If you go to the actual manufacturers, you will not find them giving that testimony. They come to me and tell me the machine-tool situation is bad. It is not only the machine-tool manufacturers but it is those who must rely upon the obtaining of the tools to make the equipment.

Admiral NOBLE. I would like to state initially that the shortage in machine tools which we now face is because of the need for machine tools to manufacture types of equipment which we have not manufactured previously, such as the jet engines. You are speaking of guns, When you get to those items which need new types of machine tools or require a scarce type like the Bullard press, then you do not, at the present time, have the capacity to do it.

### PRODUCTION OF GUNS

Senator FERGUSON. Are these guns you are talking about such that you have tools to actually make them?

Admiral NOBLE. They are under manufacture at the present time, and there is no shortage of machine tools for that production. I can assure you.

Senator O'MAHONEY. Is this the new gun?

Admiral NOBLE. It is not a new gun, sir.

Senator O'MAHONEY. Admiral Clexton was telling us that the old guns did not have the computing ability to follow the new modern jet airplanes.

Admiral NOBLE. The 3″/50 gun, which is actually being introduced now into the fleet to replace the 40-millimeter, is a gun which we used during World War II and in World War I. It has been modified to a considerable degree to increase its rate of fire.

Senator O'MAHONEY. Do you have machine tools capable of making that gun with the modern improvements?

Admiral NOBLE. Yes.

Senator FERGUSON. How long do you anticipate it will take to outfit these ships with this new equipment?

Admiral NOBLE. They have a schedule provided at the present time which I do not have. The Chief of the Bureau of Ordnance will have it. I was formerly Chief of the Bureau of Ordnance; so I know the schedule exists in which the introduction of the gun is done in an

orderly manner. There are guns on hand waiting to be installed. The 1952 appropriation will continue the program. I do not believe they will get all the ships covered in the course of the next couple of years because of the large number of ships involved and possibly the unwillingness of the Chief of Naval Operations to ask for money to procure the guns to be put in storage waiting for the ships.

COST OF GUNS

Senator FERGUSON. What is the cost of one of these guns?

Admiral NOBLE. My recollection is $250,000 complete—two guns, the gun mount, all the fire-control apparatus that goes with it.

Senator FERGUSON. That would not be installed?

Admiral NOBLE. It would be.

Senator FERGUSON. What is the cost at the factory?

Admiral NOBLE. That is the ordnance cost. The installation cost per unit, I would estimate, would be of the order of $40,000 to $60,000 each mount. That depends upon the type of ship, of course.

PUBLIC WORKS AUTHORIZATION

Senator O'MAHONEY. Going back to the table, Admiral, I note that you have nothing here for public works. Is the Navy represented in the new authorization bill that has been sent to the Armed Services Committee for public works?

Admiral CLEXTON. The Navy is represented and hearings are being held on the authorization bill.

Senator O'MAHONEY. In this bill you have substantial public-works authorization?

Admiral CLEXTON. That is correct, sir. The appropriation bill has not yet been sent up to the Congress.

Senator O'MAHONEY. There is no money in this bill for public works of any kind?

Admiral CLEXTON. That is right.

Senator O'MAHONEY. But there is money for maintenance of existing facilities; is there not?

Admiral CLEXTON. Every one of the appropriations that maintains the shore facilities has a definite amount of money in this request for maintenance of their facilities.

NAVY PETROLEUM RESERVE NO. 4 IN ALASKA

Senator O'MAHONEY. I observe that there is no money in here for Naval Petroleum Reserve No. 4, in Alaska. What has happened?

Admiral NOBLE. I was present when Mr. Koehler made his report to Mr. Vinson on Tuesday. At the time this 1952 budget was made, decision had not been made as to whether they were going to continue that operation or not. As a result of Mr. Koehler's visit to Point Barrow, he, after discussion with Mr. Vinson, came to the conclusion they should ask for funds to continue operation at least one more year, and of necessity that must be a deficiency.

Senator FERGUSON. How much?

Admiral NOBLE. About $5 million.

KOREAN WAR

Senator FERGUSON. Is there anything included in here for the Korean War?

Admiral CLEXTON. No, sir. The normal operations of the Navy, whether they are operating in Korea, in the Mediterranean, or anywhere else in the world, are in this budget. It is only the additional costs that Korea would produce, such as the greater attrition of aircraft, the greater amount of ammunition that would be fired in a war as against a standard training period which is not in this budget.

Senator O'MAHONEY. There is another item with a zero that interests me, "Ordnance for shipbuilding and conversion." Is that new construction? I see it says "Ordnance for new construction, Navy; no appropriation requested." What is the explanation of that?

Admiral CLEXTON. The Bureau of the Budget decided that about every 4 years they would like to stop the current shipbuilding program. They let it run from 1948 through 1951 as "Construction of ships" and "Ordnance for new construction." They would like to close that program out now and start a whole new program of shipbuilding in 1952. What you see here is the closing out of the "Ordnance for new construction." That is the ordnance part of the old shipbuilding program. In 1950, as you see, it had about $41 million. For 1951 it had about $76 million.

Then the new ordnance part of the shipbuilding program which is called "Ordnance for shipbuilding and conversion, Navy," starts in the fiscal year 1952 and we expect to carry that on for 1, 2, 3, or 4 years.

Senator O'MAHONEY. I take it the Ordnance lags behind the construction of the new ships?

Admiral NOBLE. That is entirely a bookkeeping arrangement. They have authorized money for this much. They want to terminate it at some definite time rather than have it continue to drag out. They stopped it at the end of 1951. They start a new title to do this portion of the shipbuilding.

Senator O'MAHONEY. Does that interfere in any way with the construction?

Admiral NOBLE. No, sir. It is only bookkeeping.

REHABILITATION ACTIVITIES

Senator O'MAHONEY. Admiral Clexton, you speak of the cost of rehabilitation activities. This was in item No. 2, on page 4. How much has the cost of rehabilitation increased? You say it is many times that required for normal maintenance.

Admiral CLEXTON. I can cite one example. We were forced to give up a training station in New York due to cut-backs in 1946 and it was taken over by the Air Force about a year ago. I believe they had a great shortage of training establishments. Whereas the normal annual maintenance of that station might run under $1 million, I believe it cost over $15 million to rehabilitate that place. In other words, trees have been growing right in the buildings. Some roofs were completely off buildings because it had no maintenance; whereas a small amount of funds during the period of years from 1945 to 1951 would have kept it in reasonable shape. That is an example.

Senator O'MAHONEY. Do you have any judgment as to how many times this cost has increased? Can you give us any figures?

Admiral CLEXTON. I would say the rehabilitation costs after a period of 5 or 6 years are 15 times the standard yearly maintenance cost.

Senator KNOWLAND. But that would not be a continuing cost, necessarily?

I understand you to say this particular installation was run down and the trees were growing all over the place. Once it was rehabilitated, the annual yearly maintenance would not be up 15 times?

Admiral CLEXTON. No, sir. The annual yearly maintenance would then be about $1 million a year and would continue that way.

Senator KNOWLAND. Which was what it was before.

Admiral CLEXTON. That is right.

Senator O'MAHONEY. It is more than the increased prices?

Admiral CLEXTON. Yes.

Senator FERGUSON. Did you ever get a statement on the increased costs of various items?

Senator O'MAHONEY. Yes. We have had several such statements that have been put in the record. I do not think we are through yet.

Senator KNOWLAND. I only want to say this, Mr. Chairman: I have just gone through 42 days of hearings on the Armed Services and Foreign Relations Committee. We have spent, roughly, $100 billion on our Defense Establishment since VJ-day. It was refreshing to have the Navy Department of all of our armed services come in and testify that it apparently was the one service that was prepared to go to the fire if there was a fire with no apologies under the circumstances. The record was very clear that the Navy did not feel that they were operating on a shoestring basis.

EFFICIENCY OF NAVY

Senator FERGUSON. In other words, you have more than a shoestring Navy?

Admiral CLEXTON. I would like to have the Chief of Naval Operations answer that because I know he testified before that committee.

Senator FERGUSON. You feel you have more than a shoestring Navy?

Admiral CLEXTON. The Navy is ready at all times.

Senator FERGUSON. You are not answering my question. I want to know whether you have more than a shoestring Navy. We have only got a shoestring Air Corps.

Admiral CLEXTON. I say "Yes."

Senator FERGUSON. I agree with you. I think personally we have more than a shoestring Air Corps.

Senator O'MAHONEY. I think so, too.

Senator KNOWLAND. There was no prejudice in my statement. I happen to be an Army man myself. It was with a great deal of pride I listened to the Chief of Naval Operations when this great country in and out of public office was expressing fear of the Soviet Union and we were not able to do some of the things that perhaps should have been done. The Navy, at least, was ready to meet whatever challenge the Nation should be faced with.

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Senator FERGUSON. It was refreshing to hear Admiral Sherman give that testimony.

Senator O'MAHONEY. There is not any doubt that the Navy is beyond question the most efficient Navy that was ever floated as it stands now, even though it is not at the strength it obtained during World War II.

Senator KNOWLAND. I want to keep it so.

Senator O'MAHONEY. I think we all do. Admiral Noble, I think you are the next man to take the stand.

## OFFICE OF NAVAL MATERIAL

### STATEMENTS OF VICE ADM. ALBERT G. NOBLE, USN, CHIEF OF NAVAL MATERIAL; PHILIP CALDWELL, DEPUTY DIRECTOR, PROCUREMENT POLICY DIVISION; LT. COMDR. JOSEPH R. SHIRLEY (SC), USN, AIDE TO CHIEF OF NAVAL MATERIAL; REAR ADM. EDWARD W. CLEXTON, USN, ASSISTANT COMPTROLLER, DIRECTOR OF BUDGET AND REPORTS; CAPT. CHARLES ADAIR, USN, ASSISTANT DIRECTOR OF BUDGET AND REPORTS; AND CAPT. ROBERT R. CRAIGHILL, USN, CHIEF STAFF OFFICER, OFFICE OF BUDGET AND REPORTS

#### GENERAL STATEMENT

Admiral NOBLE. In my appearance before the subcommittee of the House I covered several items which I have not covered here because I assumed those hearings would be available to your committee in case they should be of interest.

Senator O'MAHONEY. If there is anything you stated at any time before any committee that has a direct bearing on the question of appropriations, I think you ought to make a statement here, too. That is, different from any statement you may have made with respect to new authorizations which have not yet been made, because this committee is not called upon to pass upon the authorization bills.

Admiral NOBLE. This is not authorization, sir.

Mr. Chairman and gentlemen, as Chief of Naval Material and the direct representative of the Assistant Secretary of the Navy who is charged with the responsibility for procurement, I appreciate this opportunity to appear before your committee to discuss certain aspects of business management within the Navy. Broadly speaking, the Office of Naval Material is responsible for effectuating policy and coordinating the work of the bureaus of the Navy in the following fields: Production, procurement, facilities, inspection, industrial mobilization, inventory control, and cataloging. Since the Secretary of the Navy in his statement has already outlined to you the broad Navy policy in the fields of procurement, production, and facilities, I will not restate these policies. I will, however, undertake to answer any specific questions which you may have concerning the business management of the Navy as outlined by the Secretary.

In addition to answering questions which you may have on subjects covered in previous statements, I am prepared to discuss with you the Department of the Navy policy in the areas which have not been covered—namely, industrial mobilization planning, tooling, machine

tools, dispersal of facilities, contracting, types of contracts and principal contract features, inspection of naval material, small business, and cataloging.

### INDUSTRIAL MOBILIZATION PLANNING

The procurement programs resulting from the present limited emergency have in effect caused a partial activation of our mobilization plans. As the present procurement programs represent only a portion of our full mobilization needs, industrial mobilization planning to fulfill the remaining needs must be carried to completion. Continuous efforts are being made to dovetail the accelerated procurement programs so that there will be complete coordination of our present efforts and our planning goal in the event of an all-out mobilization. We are endeavoring, insofar as sound business practice permits, to utilize the planning we have done with industry in recent years in accomplishing the current expansion program.

Although the current expanded procurement program has accomplished a good deal in expanding the base for industrial mobilization, much remains to be done. For example, a number of our reserve plants require rearrangement and rehabilitation; augmentation of the manufacturing equipment is necessary. Also, industry preparedness measures are essential in order to develop know-how, high-volume production capabilities, special tooling, et cetera, especially for new weapons and equipment. Further, the production allocation program, a program which allocates commercial plants for specific items for manufacture in case of full mobilization, must be continued.

Industrial mobilization planning is an extremely broad project and must be coordinated between the three military departments. The Munitions Board, which is charged by law with industrial mobilization planning, is the coordinating agency in this field. In the Navy Department, the Office of Naval Material is the coordinating activity for the various bureaus and offices in all matters pertaining to Munitions Board functions which, of course, include all phases of industrial mobilization planning.

The first step in any planning is the translation of strategic plans into needed specific end items with delivery dates and places. Then the feasibility of the plan must be tested. Perhaps the plan exceeds our capabilities or the time schedule set. If so, the plan should be readjusted by the responsible military commander after the deficiencies have been analyzed. The first check analysis would cover critical materials and products. When the revised plan, if needed, is approved, then follows the detailed logistical planning with the ultimate goal of knowing where each product would be made or material processed—extended from prime contractors through subcontractors and suppliers.

### PLANNING AUTHORITY

To date the Navy has requested from the Munitions Board authority to initiate planning in nearly 13,000 private facilities for the allocation of capacity to meet our mobilization needs. In all but about 700 of these, the Navy has been designated as either the planning representative for the Department of Defense or an interested claimant agency.

In the field of mobilization requirements, computations are revised annually. Last year, for instance, such requirements were compiled and submitted to the Munitions Board covering both uniformed and civilian manpower, principal items of equipment and supplies, military construction, a considerable number of critical materials including, of course, steel, copper, and aluminum, and other materials which are vital to a war effort, such as magnesium, nickel, tungsten, cobalt, et cetera, selected components; industrial equipment, communication facilities; and utilities such as electric power, gas, and water supply.

Senator O'MAHONEY. What steps do you take to make sure you have the production of these strategic and critical materials?

Admiral NOBLE. You mean the end items?

Senator O'MAHONEY. No. You speak of steel, copper, and aluminum. You just do not wash your hands of that because the Munitions Board is clothed with that responsibility? You must be watching it all the time yourself.

### CONSTANT TOUCH WITH GENERAL AVAILABILITY OF SUPPLY

Admiral NOBLE. Yes; we do. We know what the general availability of supply in each specific category is, and where it appears to us to be deficient we operate through the Munitions Board to the National Production Authority and to the Defense Production Administration and to the Office of Defense Mobilization, making recommendations toward the increase in the availability of the basic materials such as steel, aluminum, copper, or through the class B items which are component parts common with industry, such as ball bearings and things like that.

Senator O'MAHONEY. Are you satisfied with the current stockpiling program and the current program for the development of these basic minerals?

Admiral NOBLE. Insofar as the total availability of steel is concerned, I think we have available or in the foreseeable future, requirements to meet the military and the civilian needs.

Senator O'MAHONEY. I would like to make this comment here: the Petroleum Administration for Defense is not getting enough steel to deliver oil which is being produced in the United States. The allocation of steel for the third quarter of this year was far below the needs certified to by the petroleum industry for drilling in the oil fields of the United States, for pipelines, and for refining expansion. Is that right?

### STEEL REQUIREMENTS

Admiral NOBLE. I would like to add to your statement that the Armed Forces, the three military departments, requirement for steel in the third quarter represents 11 percent of the total output. The defense effort requires a total of 40 percent. That other 29 percent is going, in some instances, to one-type operations, which, when complete, that capacity will be available to other defense items which may not get all it needs.

Additionally, new capacity is being created which will start coming in the next calendar year and some within the second successive

calendar year. I think our steel needs will be met when they get up to 120 million tons per year.

Senator O'MAHONEY. Somebody in your division has the facts as you see them with respect to production of magnesium, nickel, tungsten, cobalt, and these other materials. I would appreciate it if you would have somebody on your staff prepare for us a statement of the Navy's view of the acquisition and stockpiling and production of these basic strategic and critical materials.

Admiral NOBLE. Yes, sir.

(The information referred to is as follows:)

It is clear to us that in the event of all-out war and even at the present level of defense production we shall be very seriously hampered by shortages of some materials. We should be happier if the stockpile contained larger amounts of these critical materials. Those in charge of the stockpiling program are keenly aware of these needs.

However, the national stockpiling program has been retarded by a curious train of circumstances.

Mr. Forrestal, as both Secretary of the Navy and Secretary of Defense, supported a vigorous stockpiling program. But in 1946–48 those in charge of stockpiling were told that the needs of industry in converting back to full peacetime production must take priority over the needs of the national stockpile. When materials were adequate, the national stockpile purchased to the limit of available funds. When materials were in short supply, industry got first call and the stockpile suffered.

In 1949–50, the stockpiling operations were seriously hampered by lack of funds.

Subsequent to Korea, stockpiling has had to take second place to meeting the requirements for current military production and essential civilian requirements.

The Navy believes that it is essential to the national welfare to:

(*a*) Step up the efforts to find and develop additional sources of supply for all essential elements which are in short supply. These new sources must be in geographical areas which are likely to be available throughout an all-out war. To reduce the burden of transportation and risk of loss on route, it would be best to have these sources within North America. In many cases, this will mean payment of a subsidy to encourage the opening up of sources where the deposits are not rich enough to attract commercial development but where the drastic need for material is so great that the subsidy is essential for national security.

(*b*) Engage in a vigorous program to develop and use satisfactory substitutes for the most critical items wherever possible. The Navy has been aggressively pursuing this matter and is working closely with the Metallurgical Advisory Board of National Academy of Sciences to develop suitable substitutes and to revise our engineering designs to utilize less critical substitutes wherever this can be done without an acceptable loss of performance.

The only way we can meet current requirements for military production and at the same time increase our stockpiling of these essential elements is, by our efforts to find and open up new sources, to add to existing supplies.

### POSSIBLE DIVERGENCE OF OPINION OF NEED IN BRANCHES OF DEFENSE

Senator O'MAHONEY. Secretary Lovett told us at the very outset of these hearings that the various branches of defense when undertaking to set up this budget asked for a total of $104 billion. It was cut down to $60,650,000,000. While that is a substantial sum, it still indicates clearly that there was a wide divergence of opinion within the Defense Establishment as to what the needs of the military departments were. I rather suspect that with respect to the production and stockpiling of basic minerals there may also be such a divergence of opinion.

I asked the question particularly, Admiral, because I also happen to be chairman of the Committee on Interior and Insular Affairs which has jurisdiction over mines and mining within the United States and, therefore, I will be killing two birds with this one stone question.

Admiral NOBLE. You understand, Mr. Chairman, our requirements and therefore our recommendations for the Navy would be based upon the Navy's requirements inasmuch as we would not expect to ask for more than our requirements.

Senator O'MAHONEY. I would be glad to have that information.

Admiral NOBLE. Action is being initiated at the present time for another submission of such requirements covering most of these fields, and it is anticipated these will be largely completed by the end of this year. In other words, we are continually recomputing our requirements to reflect current changes in strategic and logistic plans so that we will always know where we stand in relation to what will be required in the event of an all-out war.

### STOCKPILING

As you know, a great many materials which are in critical supply and vital to an all-out war effort are stockpiled under Public Law 520. Within appropriated funds and available materials, it is hoped we may build up the stockpile to the minimum level considered safe for wartime requirements. Concurrently, we are making continuing efforts to develop satisfactory substitutes for some of the materials which are most critical.

Senator O'MAHONEY. That all has a direct bearing on that question I asked you. I was a member of the Military Affairs Committee which modified the Stockpiling Act. I had charge of that bill on the floor. In it we provided specifically for a directive to the Department of the Interior and to the Department of Agriculture which worked on this problem of substitutes. I am not altogether sure all we wanted has been done.

Admiral NOBLE. No, sir. I feel sure it has not.

### INDUSTRIAL MOBILIZATION PLANNING BUDGET

Included in the functions of the Office of Naval Material is the coordination of the Industrial Mobilization Planning Budget. This budget is divided into four categories: Reserve plants, industrial equipment reserve, industry preparedness measures, and planning within the Department of Defense.

The funds for reserve plants are used for maintenance, rehabilitation, modernization, annual inspection, lease administration, engineering surveys, and guard and fire protection. Funds for the industrial equipment reserve are used for acquisition, maintenance and preservation, or rehabilitation and modernization of machine tools. Industry preparedness measures consist of contracts with private industry or Government agencies to provide advanced planning or production equipment for items which will be required in quantity only upon mobilization. Planning within the Department of Defense includes administrative funds for production allocation, determination of requirements, and plant protection or security inspection.

### PARTIAL ACTIVATION OF MOBILIZATION PLANS

I repeat that the present emergency is really a partial activation of our mobilization plans. We are constantly endeavoring to integrate the current expanded procurement with our earlier mobilization plan-

ning. In so doing we are not restricting our procurement solely to companies with whom planning has been done but we are developing additional sources of production so that, by broadening the base, we will be in a position to produce the greatly increased requirements of our operating forces if an all-out war should come.

Senator O'MAHONEY. What do you mean by the allocation of capacity? Is that an allocation to private firms of capacity to be built by public funds?

Admiral NOBLE. You have a plant of 500,000 square feet which has 2,500 employees. They are capable of making something that you want them to make for you. You ask for 40 percent of the capacity of that plant to be used in the manufacture of a specific item.

Senator O'MAHONEY. In other words, when the time comes then you want such and such a firm to set aside so much of space that they presently have?

Admiral NOBLE. That is right, sir.

Senator O'MAHONEY. I was just thinking how this gearing of industrial production and procurement to the needs of the military services subordinates all private industry to the needs of the Navy. That is as it should be, but under this plan, it tends to concentrate the number of firms which are brought into the plan to do the job; does it not?

Admiral NOBLE. No, sir; not necessarily. Frequently, small plants are just as important as the larger ones.

Senator O'MAHONEY. But you just told us many of the plants were unwilling to enter into these plans at this time. They prefer to wait.

Admiral NOBLE. I said there were a certain number. They did not want to be bothered as of the moment.

Senator O'MAHONEY. That sort of forces the Navy into negotiating with a reduced number of plants?

Admiral NOBLE. Not necessarily so, because in those instances where we feel we will want capacity, we make provision, or at least we ask for allocation of it, and bide time in getting around to it.

Senator O'MAHONEY. It seems to me it is necessarily so, because if firms of whom you make the request do not want to be bothered, they eliminate themselves and thereby the area of negotiation and planning is reduced.

Admiral NOBLE. It is a matter of timing, Mr. Chairman, because as of the moment they do not want or do not wish to be annoyed.

Senator O'MAHONEY. They will clamor to come in when the time comes.

Admiral NOBLE. We have been working for over 3 years. It is going to take another several years before we get all of our plans. We revise them from time to time. We have always felt those people which do not want to be interested at the moment would change their minds radically in case of a slight depression.

### TOOLING—MACHINE TOOLS

After the last war we acquired a substantial nucleus of machine tools and production equipment. These tools and equipment now serve as a source immediately available for use in any part of industry requiring them for expansion of production pending increased production by the machine-tool industry. At the outset of the present

emergency, the Navy had about 38,000 items in reserve, about 65 percent of which were major items of machine tools and metal-working machinery. This number represents only a portion of the total which will be required for full mobilization. Since then we have withdrawn nearly 7,000 items for use in the present procurement program. Currently, we are withdrawing items at a rate of about 900 a month to meet current production schedules. In addition, as industrial mobilization plans are completed, machine tools are tagged and issued to complete machine-tool equipment needed for manufacture of the items involved. Through effective use of this reserve, we are meeting production goals which could not have been attained if we had been completely dependent on new production of machine tools. This reserve is being depleted now of the key tools, and it will not be adequate for our needs under full mobilization.

Senator KNOWLAND. What kind of a program is being carried on on the rehabilitation of some of these machine tools? I have had it brought to my attention that some plants want new machine tools when, as a matter of fact, with some modification at a greatly reduced cost, some of these existing machine tools could be made available.

Is there any rehabilitation program for that?

REPAIR AND RENOVATION OF TOOLS

Admiral NOBLE. Yes, sir. There is a program for the repair and renovation of machine tools. Initially, while we had funds, when machine tools were brought into storage, they were overhauled and tucked away. I imagine we got about 60 percent of our tools overhauled and repaired. The other 40 percent was done partially, and in some instances, was only greased and put away, because funds were not available. We are picking up those programs now to complete the overhaul of the remaining 40 percent. Naturally, there has been tremendous progress that has been made in the design of machine tools to keep pace with the higher speeds of cutting and where now one of the new machine tools would do the work of two or three of the older type by using this new method of cutting tools, naturally, the producer wants the latest word. You cannot take these old tools and rework them so they will stand these higher cutting speeds, because the machine-tool bed itself is not big enough; whereas, now we are using a 25-horsepower motor on the new machine tool, the old one would have a 5-horsepower motor. In order to get the benefit of the higher production rate, you have to use a new machine tool. Therefore, the producer wants the latest word off the machine tool builder's line.

It should be appreciated that certain tools necessary for manufacturing new and special equipment such as jet engines, guided missiles, et cetera, are not in the reserve. These tools are either newly developed or were available in such limited quantities as to be far short of our current needs. Typical examples are aircraft wing skin milling machines, heavy forging machines and hammers for jet rotor blades, and a special type of vertical boring mill for the jet engine. This equipment must come almost wholly from new production.

The importance of special tooling cannot be overemphasized. In view of the peculiar nature of military material, exacting specifications and close tolerances, the need for special tools is a matter of vital importance. A few of the advantages inherent in the availa-

bility of proper and sufficient special tooling are uniformity of product, increase in volume of production, and reduction in unit manufacturing cost; all this, accompanied by a considerable saving in manpower.

RESERVE OF CUTTING TOOLS

We are fortunate in having saved from World War II surplus a reserve of cutting tools whose estimated 1946 value was $50,000,000.

Through the Navy's energetic efforts, the entire inventory was shipped to Navy storage locations, identified, and catalogued. We are now about to distribute this material among the military departments and the demands on the heavily loaded cutting-tool industry will be reduced.

In summary, it is our purpose to have readily available such machine tools, dies, jigs and fixtures, special tools, gages, and other industrial equipment as will enable industry to commence immediate production of the material for which there would be an urgent need in case of an emergency.

Senator KNOWLAND. Going back to Senator Ferguson's prior question on the shortages of machine tools, at least certain categories, the information I have received has indicated there is a delayed action in getting certain types of machine tools if orders go in today for perhaps 24 months or even longer. Have you made any check as to how many of those machine tools are being exported?

Admiral NOBLE. No, I have not. We have no reason to believe any large number would be exported. They need an export license and we would be consulted. I do not remember having seen any application in the past several months.

Senator O'MAHONEY. My understanding of this testimony is the Navy actually saved $50 million worth of these tools?

Admiral NOBLE. Yes, sir.

Senator O'MAHONEY. You saw them going but you grabbed them before they were lost?

Admiral NOBLE. Yes, sir.

Senator KNOWLAND. Is that $50 million the original cost or the depreciated cost, or what?

Admiral NOBLE. The estimated value as of 1946.

Senator O'MAHONEY. They are much more valuable now, I suppose.

Admiral NOBLE. Yes.

Senator O'MAHONEY. Let us congratulate the Navy for that.

INSPECTION OF NAVAL MATERIAL

Admiral NOBLE. The Material Inspection Service, USN, is composed of offices presently engaged in the inspection of material and the administration of contracts for material of every type purchased for the Navy from private contractors, including those offices hereafter established for that purpose.

The field offices of the Material Inspection Service, USN, fall into two general categories: first category, the general inspection offices whose principal functions are the inspection of material and the administration of contracts for material for all bureaus and activities of the Navy, and, on occasion, for other departments of the Government; and, second category, those offices which, in addition to their

inspection function, perform for an individual bureau on specialized types of products certain bureau functions which have been decentralized for greater effectiveness. The general inspection offices are located in the heavy industrial centers of the United States with suboffices in cities where industrial output justifies. For example, there is a main office in Atlanta, Ga., with suboffices in Memphis, Tenn., Winston-Salem, N. C., Jacksonville, Fla., and Birmingham, Ala. The bureau field offices are generally located in specific plants such as Newport News Shipbuilding Co., Newport News, Va., Ford Instrument Co., Long Island City, N. Y., and Consolidated Vultee Aircraft Corp., San Diego, Calif.

Senator O'MAHONEY. How are these offices staffed?

Admiral NOBLE. By officers in charge with civilians who do the actual inspection. They are civil-service employees.

Senator O'MAHONEY. They are civilians who do the actual inspection?

Admiral NOBLE. The day-by-day inspection.

Senator O'MAHONEY. Are they qualified?

Admiral NOBLE. Yes, sir. The inspectors who are selected are usually engineering graduates. They are given courses of training in the specific field they are to operate in and frequently they attain considerable stature because of their expertness in their field.

Senator O'MAHONEY. How many of these are permanent employees of the Navy? What proportion are recruited specially for a period of build-up such as we are now in?

Admiral NOBLE. I do not have with me the immediate information as to our current strength. I can furnish that for the record, if you would like to have it.

Senator O'MAHONEY. How do you get them?

Admiral NOBLE. We advertise for them. They normally come from engineering fields.

Senator O'MAHONEY. Do you get a high type of expert?

Admiral NOBLE. We get a fine type of person; they become experts through training and experience because we have to start them at a low scale and, therefore, we get them young where possible and train them and bring them up. Frequently they come from the actual manufacturing centers. We go to Westinghouse, General Electric, or the Naval Gun Factory, or to the shipyard in Boston and ask for a man who, with training, would be qualified to be an inspector of turbines.

Senator O'MAHONEY. I take it the Naval officers who supervise this work are also engineering officers?

Admiral NOBLE. They are technically trained officers. For example, the inspector of machinery up at Schenectady is a post-graduate in engineering, and has had not only that experience but he has had experience in applying his information to an assignment in a technical yard like the navy yard in Philadelpha, where they overhaul turbnes and things like that.

Senator O'MAHONEY. I think it would be valuable for the committee to have a statement showing the character of training required for these individuals and the salary grades in which they are allocated. In other words, how many persons of high grade are required to staff these field offices for purposes of inspection and other activities, and what does it cost us to do that? This will indicate the high degree of technical skill which is required to carry on these activities.

Admiral NOBLE. Yes, sir.

(The statement referred to is as follows:)

RANGE OF GENERAL SERVICE (GS) GRADES, SALARIES, AND TRAINING OF INSPECTION PERSONNEL IN THE MATERIAL INSPECTION SERVICE OF THE NAVY DEPARTMENT

1. The range in GS grades for civilian nonsupervisory inspection personnel in the Material Inspection Service of the Navy Department is from GS–3 through GS–8. The entrance salaries for these positions are $2,650 per annum to $4,200 per annum. Civilian supervisory inspection personnel range in grade from GS–8 to GS–13, the latter grade being the top civilian supervisory inspection position in a major inspection district. Entrance salaries for these positions are $4,200 per annum to $7,600 per annum. Technical assistants attached to inspection offices range in grade from GS–8 to GS–11 with entrance salaries of $4,200 to $5,400 per annum. Higher salaries are earned by employees in all of the above positions after specified periods of service through periodic pay increases.

2. The following tabulation, from data as of the end of the third quarter of fiscal year 1951, shows the total number of employees in each GS grade in offices of the supervising inspectors of Naval material, the percentage of employees in each grade, the per annum cost for personal services by grade, and the percentage of total per annum cost of personal services by grade:

| GS grade | Number of employees in each grade | Percentage of employees in each grade | Per annum cost of personal services by grade | Percentage of total per annum cost of personal services by grade |
|---|---|---|---|---|
| 1 | 2 | 0.06 | $4,400 | 0.03 |
| 2 | 383 | 11.12 | 960,740 | 7.36 |
| 3 | 686 | 19.89 | 1,918,658 | 14.74 |
| 4 | 270 | 7.83 | 870,835 | 6.67 |
| 5 | 201 | 5.82 | 665,700 | 5.11 |
| 6 | 315 | 9.13 | 1,168,750 | 8.96 |
| 7 | 854 | 24.78 | 3,540,725 | 27.21 |
| 8 | 329 | 9.53 | 1,538,450 | 11.81 |
| 9 | 233 | 6.76 | 1,171,551 | 9.01 |
| 10 | 81 | 2.35 | 436,750 | 3.35 |
| 11 | 53 | 1.54 | 462,800 | 3.55 |
| 12 | 34 | .99 | 229,600 | 1.77 |
| 13 | 7 | .20 | 56,200 | .43 |
| Total | 3,448 | 100.00 | 13,025,159 | 100.00 |

Grades 1, 2, 3, and 4 are occupied largely by clerical employees; grades 6, 7, and 8 by nonsupervisory inspection personnel.

3. The following breakdown of electronics-inspection personnel by grades, as of the end of the third quarter of fiscal year 1951, illustrates the distribution of inspection personnel, for this type of material, in offices of supervising inspectors of naval material:

| GS grade | Number of employees in each grade | Percentage of employees by grade |
|---|---|---|
| 3 | 3 | 1.12 |
| 4 | 17 | 6.37 |
| 5 | 19 | 7.12 |
| 6 | 60 | 22.47 |
| 7 | 103 | 38.57 |
| 8 | 36 | 13.48 |
| 9 | 17 | 6.37 |
| 10 | 8 | 3.00 |
| 11 | 4 | 1.50 |
| Total | 267 | 100.00 |

The greater portion of inspection personnel for electronics materials is located in grades 6, 7, and 8, the nonsupervisory levels.

4. In filling civilian nonsupervisory inspection positions by original appointment, persons are selected who have basic trades or technical background. Training of these new employees is generally limited, therefore, to acquainting them with inspection methods, procedures, and reporting. The training of these employees is conducted by supervisory employees who receive instruction in training techniques through a supervisor-development program. The supervisors also assign new employees to work with employees already trained until the new employees are able to assume inspection responsibilities on their own. During fiscal year 1951 a substantial portion of new inspection personnel appointed had previous experience in the Material Inspection Service during World War II. This source of new personnel is about exhausted, emphasizing the need for intensified training in fiscal year 1952. Also, during fiscal year 1951, a number of persons were employed who had had appropriate training and experience in the Armed Forces. In some cases where highly specialized equipment is to be inspected, training courses are established in the Naval Establishment to provide sufficient training to qualify present personnel already having basic inspection knowledge. Examples of this specialized training are:

(*a*) A 6 weeks' course of instruction in the 3"/50 rapid-fire gun at the Naval Gun Factory, Washington, D. C.

(*b*) A 1-week training course in inspection of rubber products at the United States Naval Shipyard, Mare Island, Calif.

(*c*) A 1-month training course in special ordnance item inspection at the Naval Inspector of Ordnance Office, Eastman Kodak Co., Rochester, N. Y.

(*d*) A 2 weeks' course in packaging and preservation of materials destined for domestic and overseas shipments at the Army Rossford Ordnance Depot, Toledo, Ohio.

(*e*) Specialized training courses are in prospect as follows:

(1) A 6 weeks' course of instruction in torpedo inspection at the Naval Ordnance Plant, Forest Park, Ill.

(2) A 6 weeks' training course in guided missiles at Consoildated Vultee Aircraft Corp., San Diego, Calif.

(3) A course for inspection of marine wood lamination processes at the Forest Products Laboratory, Madison, Wis., or at Timber Engineering Co., Washington, D. C.

(*f*) New personnel in training for aircraft inspection are instructed for approximately 12 weeks at one of nine locations specializing in either aircraft, engines, or electronics work. This training is performed on the job under the supervision of more experienced personnel until the trainee is qualified. Trained personnel are then assigned where required. In some cases when highly specialized equipment requires inspection, one or more inspectors may be sent to other Government activities such as shipyards, laboratories, and air stations for training in certain fields.

5. In some instances training programs are established and training aids developed applicable to inspection personnel of all offices of the Material Inspection Service. A program of instruction in the basic administration, functions, and procedures of the Material Inspection Service was conducted in 1946 through 1948 at Naval Air Station, Alameda, Calif. These courses were for periods of 10 weeks and were attended by personnel from all offices. This fundamental training of a relatively large nucleus of inspectors has served as an excellent uniform basis for further training of new personnel at local office levels. Two films have been made and distributed in the interest of training inspection personnel. One is entitled "Gages, Use and Handling of" and the other "Quality Control Through Statistical Methods." The latter film was initiated by the Navy and prepared in conjunction with the other military departments as part of a program of instruction designed to standardize procedures of the military departments in sample selection and acceptance of material.

Admiral NOBLE. Management control of the first category of field offices has been assigned to the Chief of Naval Material. Management control of the second category has been assigned to appropriate bureaus. Each bureau and office of the Department of the Navy exercises technical control of matters under its cognizance.

For example, where the General Inspection Service performs the inspection, the Bureau of Ships might be procuring it. The Bureau

of Ships will tell us explicitly in detail how they want this inspection carried out in order that they might be satisfied that they are getting the material they are paying for.

### CHIEF OF NAVAL MATERIAL

The Chief of Naval Material is charged with coordinating the Material Inspection Service, USN, as a whole, including the following functions:

(*a*) The review of all proposed Secretary of the Navy directives to establish or disestablish field offices.

(*b*) Making visits to, surveys and inspections of, any of the offices as necessary to insure proper coordination.

(*c*) The responsibility for the maintenance and revision of the Material Inspection Service, USN, Administration Manual, issued for the guidance of the inspection service as a whole.

(*d*) The establishment of uniform policies, standard procedures, plans of organization, reports and forms, after consideration of the special conditions in the various offices and after full discussion with the bureaus concerned.

In the interest of increased efficiency and economy, the bureaus utilize the services of the general inspection offices wherever possible. However, when any Chief of a Bureau feels that a product is highly technical or in the experimental stage where it needs particularly close guidance by specialists from the Bureau concerned, he recommends to the Chief of Naval Material the establishment of a bureau field office.

These offices, in addition to inspecting material for conformance with engineering standards, perform other valuable services as representatives of the contracting officers and technical bureaus. They are the direct contact with industry which is essential for maximum team work. They serve the Navy by providing a source of information as to prospective contractor's ability to produce desired materials, location of additional productive capacity, advising new production techniques, and in assuring industry compliance with the various terms of the contracts which are let. They serve industry by assisting in the interpretation of specification and other contract requirements, providing a source of information on such matters as guaranteed loans, certificates of necessity, controlled materials plan, and in the location of necessary sources of supply. They are especially helpful in assisting small business in seeking Government contracts and purchase orders being placed by prime contractors.

By direct communication with the Office of Naval Material these field activities can keep the Navy well informed of any difficulties being encountered in the field, either as a result of policies established by the Office of Naval Material or as a result of noncompliance of established policies. Thus, the Office of Naval Material is able to continually evaluate the effectiveness of difficulties encountered in the Navy program.

### CATALOGING

Fundamental to the effective management of material inventories is a uniform system of identification. Such a system is being obtained under the Navy cataloging program, now substantially on a current

basis. With respect to the establishment of a uniform supply language for the Federal Government, as contemplated under the Federal cataloging program, the Navy has completed approximately 50 percent of its work. Over-all policy direction of the Navy program and coordination of naval effort in the Federal program is exercised by the Office of Naval Material under the authority contained in Public Law 432, Eightieth Congress.

Senator O'MAHONEY. The Navy has completed approximately 50 percent of its work in this cataloging program. When did that work begin?

Admiral NOBLE. It began in 1947.

Senator O'MAHONEY. So it is a rather tremendous task.

Admiral NOBLE. It started initially under the Navy's own program. The Federal portion of it came in, I think, in 1948. We have completed 50 percent of the Federal cataloging program. We have orders to be completed by the 1st of July 1952. That is one year from now.

Senator O'MAHONEY. How many items are in this proposed cataloging program?

Admiral NOBLE. Currently the Navy has over 2,000,000 items, but that does not include all of them. A definite number is hard to come by, because we find frequently where we may have five items that they will consolidate eventually into only one. That is caused by the fact that we have picked up, particularly in the small components fields—ball bearings, for one—I hesitate to give the number we had initially, but I think it was in excess of 350,000 manufacturers' numbers which were finally boiled down to 15,000. We anticipate before we get through we will have identified and cataloged, 2,000,000 items, of which we hope to boil them down to possibly 1,700,000. That would be a very rough guess.

Senator O'MAHONEY. That would be the result of standardization?

Admiral NOBLE. Yes, sir.

Senator KNOWLAND. You say that the Navy has completed 50 percent of your part of the program. Do you have any knowledge of what percentage of the over-all program of cataloging has been completed?

Admiral NOBLE. I think the Navy is possibly the furthest ahead of the three military departments but not very far. I understand the civilian departments have not had adequate funds to carry out their portion of it in a manner comparable to what we are doing. I think the military will essentially complete it by the deadline date, July 1, 1952, except for thousands of new procurement items coming into the supply systems each month.

Senator KNOWLAND. That same deadline applies to all three departments of defense?

Admiral NOBLE. Yes, sir.

Initial identification and assignment of Navy stock numbers to existing stores of material have largely been completed. Now, our efforts are directed primarily toward further research to uncover interchangeability data not revealed in the initial identification process and to refine the data originally developed; and, of paramount importance, toward identification of new items under procurement. We have published approximately one million items in supply catalogs. There are many more in process of compilation for publication.

INTEGRATION WITH FEDERAL CATALOGING PROGRAM

Insofar as is possible, our departmental cataloging operations have been integrated with those operations required of us in the Federal cataloging program. The rules and guides established for identification work under the Federal program are being followed in our departmental program. As the Federal identification of each supply item is assigned by the Munitions Board and published to the military and civilian agencies, we are incorporating these data in our operating catalogs, stock and allowance lists, instruction books, and maintenance manuals as they are periodically revised.

Cataloging is a continuing function, as inherent to the whole process of property management as the functions of determination of requirements, procurement and distribution. The cataloging process must be geared to current procurement programs to insure that new equipments and materials receive proper identification numbers as they are taken into the supply system. As long as we have a large procurement program, we must necessarily have a commensurately large cataloging effort.

I believe that the establishment of an effective cataloging system is a military must. While it has been proved to be a means of effecting economy in our management of the business affairs of the Navy Department, its greatest advantage is the provision of more effective logistic support to military operations.

Senator O'MAHONEY. Will you not give us some background material to show that it has effected economies, but not necessarily give that to us now.

Admiral NOBLE. Yes.

(The information referred to is as follows:)

Although great emphasis has been placed on economy benefits as generated by the cataloging effort, it is believed that the greatest advantage lies in the accomplishment of more effective logistic support to military operations. However, the following are concrete examples of economies that are being realized from the Navy and Federal cataloging programs:

(*a*) One manufacturer has supplied a Navy bureau with two supposedly different screws as replacement parts, identified as his numbers 339 and 500, at a cost of 5 cents and 10 cents respectively. Cataloging research revealed that these screws were identical and were carried in the Naval Stock Account at a price of 7.2 mills.

(*b*) A gasket procured from one manufacturer as a repair part at a cost of 30 cents is now fabricated from bulk material carried in the Naval Stock Account at a material cost of 1.1 cent.

(*c*) Thread taps, formerly procured as repair parts from two different suppliers at cost of $9.12 and $2.33, are now procured from the prime manufacturer at a cost of 73 cents as a result of cataloging research.

(*d*) Packing procured by a Navy bureau from one supplier costs $8.28; procured from the prime manufacturer the cost is $2.34.

(*e*) Screws have been purchased from one supplier for $2.88 per gross; from the prime manufacturer the cost of the same screw is $1.21 per gross.

TYPES OF CONTRACTS AND PRINCIPAL CONTRACT FEATURES

Admiral NOBLE. There are two main methods of contracting used by the Navy: Formal advertising and negotiation. Since the declaration of a National Emergency by the President on December 16, 1950, in accordance with the authority contained in section 2 (*c*) (1) of the Armed Services Procurement Act of 1947, greater use has been made of negotiation than was true previously. The formal advertis-

ing method of procurement continues to have a definite place in the Navy's purchasing program and is used in all appropriate cases.

I want to emphasize the point that negotiation does not preclude competition or mean an absence of competition. Often, there is just as much competition between prospective suppliers in a negotiated procurement as there would be in an advertised one. In fact, negotiation in some cases may develop competition which might be lacking in advertised procurement. Negotiation simply means that the formal advertising procedure, with its sealed bids and set bid opening time is omitted.

The Navy endeavors initially to price closely its procurements on an individual basis. An attempt is made to limit the costs and profits "before the fact," that is, before the contract is executed rather than to recapture profits "after the fact." Various methods of procurement, different types of contracts, and price analysis are used to attain this goal. The reasonableness of prices are checked by (1) adequate competition, (ii) price comparisons, (iii) cost breakdowns or (iv) any other information which may be available.

Fixed-price contracts are used for formal advertising and in all other cases where it is practical to use this type of contract. When costs under a proposed contract cannot be accurately estimated or predicted, cost-reimbursement or incentive-type contracts are used; or a redetermination clause is inserted in a fixed-price contract. The more important types of contracts used by the Navy and their principal contract features are:

(*a*) Fixed-price contract: Provides for a firm price or prices for the supplies or services which are being procured. It may include provision for price escalation or adjustment.

(*b*) Fixed-price contract with provision for redetermination of price: A fixed-price contract containing a clause requiring the contractor, at an agreed point in its production thereunder, to furnish a statement of actual costs to date, and of projected costs to completion, at which time the prices are redetermined upward or downward.

(*c*) Cost contract: Provides for payment to the contractor of allowable costs, to the extent prescribed in the contract, incurred in the performance of the contract. It establishes an estimate of the total cost for purposes of (i) obligating current funds and (ii) establishing a ceiling beyond which the contractor cannot go (except at his own expense) without prior approval of the contracting officer. It is used only after determination that (*a*) such method of contracting is likely to be less costly than other methods or (*b*) it is impractical to secure supplies or services of the kind or quality required without the use of such type of contract.

(*d*) Cost-plus-a-fixed-fee contract: Similar to the cost contract in that it provides for payment to the contractor of all allowable costs as defined in the contract and establishes an estimate of the total cost. It differs from the cost contract in that it also provides for payment of a fixed fee based on the estimated cost of the contract. Its use is subject to the same determination as the cost contract.

Senator O'MAHONEY. Of course, I do not need to tell you this type of contract is reviewed with a good deal of suspicion generally in Congress and elsewhere.

What have you to say about the adequacy of protection of the public's dollar in the award of such contracts?

Admiral NOBLE. Generally speaking, Mr. Chairman, I think that the Navy is able, through its cost-inspection service, which examines the costs at the plant, to safeguard the interests of the Government rather adequately.

Senator O'MAHONEY. Of course, that is a general statement. You said under the description of cost contracts that such a contract provides for payment to the contractor of allowable costs. In determining what allowable costs are, a vast field is provided for negotiations between the person who determines what the allowable cost is and the contractor who is arguing for a higher price.

Admiral NOBLE. No, sir.

Senator O'MAHONEY. How is that done? Who determines the allowable cost?

Admiral NOBLE. We have a manual of allowable costs. Mr. Caldwell will speak to that.

Mr. CALDWELL. The procurement regulation used by the three services sets forth the principles for the determination of allowable costs on cost contracts. It is contained in this book that I have here in front of me. It goes down the various types of costs, direct costs, indirect costs, and overhead items.

Senator O'MAHONEY. This is a manual which has been prepared for the use of all persons who have anything to do with passing upon these costs?

Admiral NOBLE. The Armed Services Procurement Regulations.

Mr. CALDWELL. Section 15.

Senator O'MAHONEY. So it is possible to determine exactly whether or not an official charged with this responsibility is adhering to the manual or not?

Mr. CALDWELL. I would say to the extent I believe you have in mind by your question; yes.

There is always the question of reasonableness in any given circumstance.

Insofar as the types of costs are concerned, and within any reasonable degree, there would be no question but what you could ascertain whether the rules had been followed.

Senator O'MAHONEY. What steps are taken to make sure that the persons to whom this work is assigned are sure to follow these rules?

Admiral NOBLE. Because the cost-inspection service will not allow the costs if they are not in accordance with the contract terms. The contract provides that these instructions prevail.

Senator O'MAHONEY. What I am trying to do is to have you make a record to show those who may read the record what steps the Navy takes to close the door to the improper allocation of costs.

Admiral NOBLE. The cost-inspection service allows costs only in keeping with this manual.

We also have independent inspectors who inspect the work of the cost inspectors to see that they adhere to these instructions. Only in the fields where judgment is required would there, in my opinion, be any criticism. In those fields, it is always subject to review.

Usually the matter is discussed during the contracting period, and agreement is arrived at in advance so as to protect the interests of the Government.

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DETERMINATION OF PROPER FIXED FEE

Senator O'MAHONEY. How do you reach a determination of what the proper fixed fee is?

Admiral NOBLE. We have an action of the renegotiation boards to give us some guidance. We have knowledge of the difficulty of manufacturing, how much money the contractor is actually risking himself, and other factors of that nature to guide us. For example, we might, in fixing a fee, wish to give the contractor an incentive to early delivery and excellent work. If he will keep the costs down and meet a predetermined delivery date, we might be willing to give him, say, the benefit of 1 or 1½ percent more than we would someone who cannot meet our needs.

Senator O'MAHONEY. What is the range of fixed fees? What is the lowest and the highest fixed fee for which any arrangement has now been made?

Admiral NOBLE. I would have to go back on my memory for that.

Mr. CALDWELL. The Armed Services Procurement Act provides that the maximum fee in a CPFF production contract is 10 percent of the estimated cost. The maximum fee on CPFF research and development contracts is 15 percent.

Senator O'MAHONEY. I am familiar with the provisions of the law. What I was driving at is, on contracts that have been made during the past year and the contracts which may be made under the appropriation which we are now working on, what, in your opinion, was the actual range during fiscal 1951? What is the probable range during fiscal 1952?

Mr. CALDWELL. We will have to look that up and fill that in.

(The information referred to is as follows:)

On the basis of a partial study of cost and cost-plus-a-fixed-fee contracts entered into by the Navy during fiscal year 1951, it has been determined that the average rate of fee on cost-plus-a-fixed-fee production contracts was approximately 5 percent of the estimated cost, and on research and development (including services) is approximately 6 percent of the estimated cost. On cost-plus-a-fixed-fee production contracts, no fee in excess of 7 percent of the estimated cost has been paid, and on cost-plus-a-fixed-fee research and development contracts no fee in excess of 10 percent of the estimated cost has been paid.

Insofar as it is possible to forecast the rates of fee which may be paid on cost-plus-a-fixed-fee contracts during fiscal year 1952, it is believed that the fiscal-year-1951 pattern will apply.

Senator KNOWLAND. Admiral, the general impression was during World War II there were at least some instances in shipbuilding and otherwise where the firms would actually monopolize some manpower and it would be a payroll item. It would be that they would take a chance of not getting their employees later and they would keep them overstaffed, if not actually standing around. How do you meet that kind of problem?

Admiral NOBLE. That can be met through one of two ways. If it is a Navy ship being constructed at a private plant, the supervisor of shipbuilding can make representations either directly to the contractor and tell him he is going to recommend a disallowance of the costs, or the cost-inspection people can say they will make a recommendation for disallowance of costs. It is a hard problem to deal with because so frequently it is not as clear-cut as the critic represents, because a shipbuilder may have a poor knowledge of certain requirements. He

has started a build-up of personnel to get them available and trained and is charging that against the then going contract. It is hard to pick out a certain number and say these people are excess and you should be required to let them loose.

Senator KNOWLAND. If there was a flagrant abuse of the situation was what I wanted.

Senator O'MAHONEY. You were talking about the incentive-type contract, Admiral.

Admiral NOBLE. (*e*) Incentive-type contracts: Provides for an estimated or target price (called the "contract price"), a ceiling price, and a predetermined sliding scale of profit. Redetermination of price takes place after completion of the contract, but the final price may not exceed the maximum price set forth in the contract at the time it is entered into. This type of contract may be of either a fixed-price or a cost-plus-a-fixed-fee nature. In the latter case, the incentive features apply only to the amount of fee paid a contractor. The incentive-type contract is used only after it has been determined that (*a*) such method of contracting is likely to be less costly than other methods or (*b*) it is impractical to secure supplies or services of the kind or quality required without the use of such type of contract.

(*f*) Letter of intent: A preliminary contract with or without a tentative price or specific amount agreed to therein, and with such other basic terms set forth therein as can be agreed to at that time. It authorizes the contractor to commence work, incur costs, and make commitments pending negotiation and execution of the final definitive contract. It usually establishes a ceiling, lower than the estimated price, on obligations which the contractor may incur pending execution of the covering definitive contract.

Senator O'MAHONEY. I would like to have you prepare for the record a statement showing the percentage of the total contractual obligation which during fiscal 1951 fell into each of these six categories and what you look forward to in 1952.

Admiral NOBLE. In regard to the latter, I would like to omit that, because the letter of intent covers all of them.

(The statement referred to is as follows:)

The latest statistics showing the types of contracts employed by the Navy in the first 11 months of fiscal year 1951 are as follows:

*Use of pricing provisions, by type* [1]

| Pricing provision | Cumulative, July 1950–May 1951 | | |
|---|---|---|---|
| | Number | Dollar value (thousands) | Percent dollar value |
| Fixed price | 24,354 | $2,036,949 | 58.4 |
| Fixed price—Redetermination | 327 | 596,063 | 17.0 |
| Incentive type | 22 | 371,817 | 10.6 |
| Cost type (no fee) | 266 | 113,151 | 3.2 |
| Cost-plus-a-fixed-fee | 574 | 373,564 | 10.7 |
| Definitive contracts | 25,543 | 3,491,544 | 100.0 |
| Letters of intent and other | 400 | 1,621,992 | |
| Grand total | 25,943 | 5,113,536 | |

[1] Data are limited to procurement actions amounting to $5,000 or more and are exclusive of interservice and interdepartmental procurements.

There is no satisfactory way of estimating with accuracy similar statistics for fiscal year 1952. However, the over-all relationships probably will not change materially.

DISPERSAL OF FACILITIES

Admiral NOBLE. In determining the location of new facilities, two opposing factors come into play. On the one hand, we are faced with the fact that our available resources of management, labor, electric power, and transportation facilities are definitely limited, and tend to be concentrated in particular areas. On the other hand, we are faced with the strategic problem of dispersal—when, how, and to what extent. I would like to take up each of these factors in order.

First of all, the question of availability of competent management and of skilled labor and technicians is a most serious one. Of all our essential requirements, these are perhaps the most essential. First, they have to be discovered. A large segment of the management personnel and skilled labor developed for the defense effort during World War II was lost to defense upon demobilization. An example is presented by the shipbuilding and ship-repair industry. From a wartime peak of 1,700,000 employees, these vital defense industries slumped to approximately 45,000 employees immediately prior to the Korean crisis. And this happened notwithstanding the urgent recommendation of the President's Advisory Committee on the Merchant Marine, contained in its report of November 1947, which stated:

* * * the committee feels that it will be a matter of national concern if the number of men actually engaged in the construction of vessels in private and naval shipyards should drop below 60,000, and that every practicable effort should be made to so schedule shipbuilding that the workload in the shipyards may be maintained at a reasonably uniform level.

SKILLED MANAGEMENT AND LABOR

The comparatively small remaining nucleus of skilled management and skilled labor must be the starting point for building a large defense-production organization. In some cases this nucleus can be moved to other areas; in many, it cannot. People are understandably reluctant to move from the place where they have established their homes, enrolled their children in schools, built up friendships, and otherwise identified themselves with the community. But, even when they can be persuaded to move, that is only the beginning. In their new homes they will need transportation, housing, and utility services. They will require schools for their children, recreational areas, commercial facilities, and churches. The furnishing of all these places is a great strain on the economy. It requires the allocation of scarce manpower and materials for purposes other than bare defense plants and their equipment. Unless we are willing to incur these collateral costs, we have to establish our new plants near the places where our skilled management and technical people now are.

I would like to give you a factual estimate of the problems attendant to training machine-tool operators, journeyman machinists, toolmakers, all of which will be required were a defense plan placed in an area in which there was not available a satisfactory source of mechanics. This information has been obtained from the records of General Motors Corp., Ford Motor Co., Houdaille-Hershey Corp., and the Naval Gun Factory.

TRAINING OF MACHINE-TOOL OPERATORS

(*a*) The experience of World War II demonstrated that the cost of training machine-tool operators ranged from a low of about $100 to about $1,400 each. For example, on ordnance material such as projectiles, rockets, et cetera, where a high degree of tooling is possible, with the cutting tools and special tooling set up for the operator—and maintained—by a tool setter, the cost of training the machine operator was about $100.

On the other hand, to train a lathe operator, "starting from scratch," the time was about 6 months and the cost about $1,400. The operator when trained would be able to produce acceptable work from blueprints, at the end of that period. Considerable scrap would be produced during the first few months of the training period.

MACHINIST-APPRENTICE TRAINING

(*b*) It requires 4 years to train a machinist apprentice at the Naval Gun Factory at an average cost per apprentice of $6,000. During that time he does produce considerable work of value. He is not a journeyman machinist until after he has had that 4 years' training as an apprentice.

(*c*) To train a journeyman machinist—and, by that, I mean one capable of operating lathes, planers, shapers, boring mills, milling machines, and of producing acceptable work without a complete tooling of the job—requires about 4 years for an apprenticeship, plus 2 to 4 years of varied experience, depending upon the degree of precision required.

TRAINING TOOL MAKERS

(*d*) To train and/or develop a tool maker requires about 4 years' training as a machinist apprentice, plus an additional 2 years for those showing special aptitude to become tool makers.

In the continued endeavor to transfer the skill of men to the machine, such as Keller profilers, Monarch tracer lathes, Brown & Sharp automatic grinders, et cetera, the need for highly skilled tool setters becomes more urgent and they are usually the product of some form of apprenticeship, with, of course, the usual percentage of non-apprentices but with a high level of aptitude and intelligence. The same is true, to a lesser degree, for a tool setter who is thoroughly experienced in one job—the 3″/50 projectile, for example. The point I wish to make is that industry, in order to make full use of elaborate and special tooling which enables an inexperienced girl to perform certain operations on this projectile, must provide the requisite number of tool setters and broadly experienced journeyman machinists as supervisors and consultants. Great strides were made on this problem in World War II by the courses offered under the leadership and financing of the United States Office of Education, carried on in technical schools all over the country during evening sessions, supplementing the regular shop work in the daytime. To me, it appears that a repetition of this program is necessary.

Senator KNOWLAND. What are the facts developed under our operating the Selective Service System? Have we called up into the serv-

ice very many people with these skills which you have mentioned, and what becomes of the people if you find a skilled man in the Navy?

Admiral NOBLE. To answer your first question, there have been a considerable number of people called by the draft who have some of these aptitudes, although with the ages being taken, I doubt they have acquired the precision which is needed to make them valuable. Normally, when these people are inducted into the service, questionnaires which they answer indicate where they should be assigned and advantage is taken of their special training.

Next is the question of power, particularly electric power. In World War II, several plants were constructed in localities where the electric power was entirely inadequate and the plants could not be fully used for the purpose intended. Examples of this error were the aluminum-reduction plants at Brooklyn, N. Y., and Riverbank, Calif. An uneconomic marginal plant is the result when a new power plant, or long transmission lines from existing plants, are necessary.

TRANSPORTATION

Again we have the problem of transportation. Transportation of large quantities of raw and basic materials to a plant, and the distribution of the finished products from a plant, require location on a railroad system capable of servicing the industry. Highways to permit truck hauls must also be considered.

Clearly a balance must be struck between dispersal for strategic reasons and the practical problems which I have just discussed. But even from a strictly military standpoint, dispersal is not always the answer. Wide scattering of targets often presents an extremely difficult defense problem. An enemy can concentrate on each target individually and hence is faced only with a scattered air defense. However, I would not want to leave you with the impression that we are not giving very careful consideration to the location of all our industrial facilities to obtain maximum military security and to prevent, in the event of air attacks, the complete loss of capacity to produce military items. We are. It is obviously true, for example, that the production of such vital items as ball bearings, loss of which could bring the whole productive chain to a halt, must be located in a number of widely separated areas.

Senator O'MAHONEY. The information which comes to me and comes from pretty good sources is that the Russians have pretty thoroughly dispersed their industrial facilities, even their atomic plants. We have done some of that. But to date it would appear there has been a tremendous concentration of our defense production because of the very considerations that you have emphasized here. One has only to travel up the Atlantic coast between here and New York and then westward to Pittsburgh and Chicago to see how our industrial facilities are concentrated.

Admiral NOBLE. I agree with you, sir.

Senator O'MAHONEY. If there is the danger of atomic attack, there is the tremendous danger of the loss in our productive capacity. If there is one strength the United States has in the present turbulent condition of the world in addition to the character of its people, I think it is industrial superiority.

Admiral NOBLE. I agree with your statement in full, sir. I would add that we are frequently forced to go where the people are and where the facilities are, rather than to go where we would like to go because we cannot support the location.

Senator O'MAHONEY. Congress is asked to appropriate huge sums of money to provide for civilian defense. We have been asked to provide all sorts of protection against atomic raids all over the country. That is all on the theory than an atomic attack is quite possible and yet, at the same time, we proceed with the concentration of our additional industrial capacity. The two things are absolutely at war with one another.

Senator KNOWLAND. Of course, you have the additional factor, do you not, Mr. Chairman, and that is one thing we are trying to do is to rearm as quickly as possible and using the overworked term of "calculated risk," the question is whether you are justified in this dispersal program to the extent it might slow down your rearmament program.

Senator O'MAHONEY. Undoubtedly all of these factors come into consideration.

Senator KNOWLAND. In the early days the ocean frontiers would be our frontiers. Now the shortest distance over the polar ice cap might lead to a Midwestern State which, in the old days, was considered to be safe from any naval attacks.

## SMALL BUSINESS

The Chairman of the Munitions Board, Mr. Small, has discussed with you earlier in some detail what the services are doing to bring about effective small-business participation.

Admiral NOBLE. Without being repetitious in discussing this subject, I do want to emphasize that in carrying out the Navy's procurement program, we are giving constant and vigorous attention to the proper utilization of the resources of small-business concerns. We are doing this because we believe it proper that, to the greatest extent possible military orders should be spread widely throughout an industry and geographically, consistent with our current needs and those which would be required in the event of full mobilization. We are guided by this basic mobilization policy of broadening the industrial base of our suppliers not only because of the healthy effects of such a policy on the economy, but also because we believe it is in our own self-interest to do so.

The Navy learned during World War II that small firms can frequently provide results not otherwise obtainable. It is equally true today. For example, early in February of this year an urgent requirement developed for a small, but very important, specialized electronic assembly for use in naval aircraft operating in the Korean theater. The item had to be designed, miniaturized, engineered for production, manufactured and delivered by June 30, 1951. After canvassing the field of possible large and small suppliers, only one supplier—a small concern—would tackle the job. The item not only has been successfully developed and produced, but the order has been delivered ahead of schedule. In another case, shortly after the invasion of South Korea when proper weapons and ammunition were so urgently needed to knock out the tanks of the invaders,

a number of small concerns produced rocket components which were in use in Korea 2 or 3 weeks after the orders were placed.

We in the Navy know of and recognize the achievements of Navy small-business concerns such as these. We also know that total war requires mobilization of the total industrial resources of the Nation—including small-business concerns. That is why we believe it is good business for the Navy to stimulate, in ways appropriate to their capabilities, participation by the smaller firms in our procurement programs.

From time to time, and at the present time, legislation is pending in the Congress which is designed to give greater assistance to small business. It is extremely important that such legislation be carefully drafted and that agencies established to assist small business be soundly conceived if such legislation is to achieve its objectives.

In this connection, I would commend two points for your serious consideration.

First, it is my firm belief that to be effective such legislation must provide for cooperative efforts between the services and small business agencies rather than empower small-business agencies with authority to issue mandatory directives to military procurement officers. The fundamental responsibility of a procurement officer is to secure supplies and equipment of requisite quantity and quality, when needed, and at fair prices. He cannot reasonably be charged with this responsibility if he is denied the authority and discretion to exercise judgment in the selection of contractors and the negotiation of contract terms. Any reasonable proposal for participation by small concerns made by small-business agencies can and will be given full consideration in a spirit of mutual interest by Navy purchasing officers.

Senator O'MAHONEY. I think I might say, Admiral, I believe Members of Congress realize that in a preparedness effort in which we are now engaged, or in total war, we must trust the military authorities to produce the things that are needed. That is the objective. The objective is not to distribute contracts to business concerns, big or little. The objective is to win the conflict.

Admiral NOBLE. Yes.

The second point I want to stress is that if monetary subsidies are to be paid small-business concerns, such subsidies should not be charged to or paid out of funds appropriated for defense purposes. To do so is to present a distorted record of the cost of defense.

In our recent discussions of these two points with the staff members of the committees considering these matters in the Senate, satisfactory understandings have been reached. It is our hope that any small-business bills will embody these principles when finally enacted.

Senator O'MAHONEY. Are there any questions, Senator?

Senator KNOWLAND. No.

Senator O'MAHONEY. Admiral, we are in a dilemma now. This afternoon, the Department of Interior appropriations bill is on the floor.

You were going to present some testimony with respect to military personnel, I believe. That would probably take at least a half hour.

Admiral CLEXTON. The statement will not take that long.

Senator O'MAHONEY. It is very important and I would like to have as full a meeting of the committee as possible when we undertake to go into that military personnel item.

I must leave at 12:15.

So that it would be rather difficult to do that at this session.

Would you be prepared to come up tomorrow morning at, let us say, 9:30?

Admiral CLEXTON. Yes, sir.

Senator O'MAHONEY. Then we will get into some of the details also.

Admiral CLEXTON. Vice Admiral DuBose handles the military personnel, Navy, Naval Reserve, and officer candidates. The details of the training programs are under the appropriation "Military personnel, general expenses."

Senator O'MAHONEY. Will that deal with the details of the appropriation?

Admiral CLEXTON. Yes, sir.

Senator O'MAHONEY. Then the committee will stand in recess until 9:30 tomorrow morning.

(Whereupon, at 12:10 p. m., Thursday, July 5, 1951, the hearing was recessed until 9:30 a. m., Friday, July 6, 1951.)